

IN THE CLAIMS

1. (Previously presented) A tape circuit substrate comprising:
a base film; and
a plurality of beam leads adjacent to the base film having a length and a width, each beam lead including a widthwise wavy portion, wherein the base film has a substantially uniform thickness that follows the contours of the beam leads and does not have an opening extending therethrough.
2. (Original) The tape circuit substrate of claim 1, wherein the base film includes a flexible film.
3. (Previously presented) The tape circuit substrate of claim 1, wherein the widthwise wavy portion of the beam lead includes a semicircular widthwise wavy portion, an S-shaped widthwise wavy portion, or a zigzag widthwise wavy portion.
- 4-5. (Canceled)
6. (Currently Amended) A semiconductor chip package comprising:
an integrated circuit chip including a plurality of chip pads formed on a top surface thereof; and
a tape circuit substrate including:
a base film having a top surface;
a plurality of beam leads having a length and a width formed on the top surface of the base film, wherein one end portion of the beam lead extends toward the chip pad from the base film and is bonded to the chip pad, and wherein the extended portion of the beam lead has a widthwise wavy portion; and
a protective layer covering the beam leads and the top surface of the base film.
7. (Original) The semiconductor chip package of claim 6, wherein the base film includes a flexible film.

8. (Previously presented) The semiconductor chip package of claim 6, wherein the widthwise wavy portion of the beam lead includes a semicircular widthwise wavy portion, an S-shaped widthwise wavy portion, or a zigzag widthwise wavy portion.

9. (Previously presented) The semiconductor chip package of claim 6, wherein the widthwise wavy portion of the beam lead includes a neck part, a bent part, and an end part.

10. (Previously Presented) The semiconductor chip package of claim 9, wherein the neck part has a length ranging from about 40 μ m to about 80 μ m, the bent part has a length ranging from about 100 μ m to about 500 μ m, and the beam lead has a width of about 50 μ m or less.

11. (Original) The semiconductor chip package of claim 10, wherein the length of the neck part ranges from about 55 μ m to about 75 μ m.

12. (Original) The semiconductor chip package of claim 10, wherein the width of the beam lead ranges from about 10 μ m to about 30 μ m.

13. (Original) The semiconductor chip package of claim 6, wherein the integrated circuit chip further includes a plurality of chip bumps formed on the chip pads.

14. (Previously presented) The semiconductor chip package of claim 6, further comprising:

a sealing resin encapsulating the chip pads and the widthwise wavy portions of the beam leads.

15. (Original) The semiconductor chip package of claim 6, wherein the other end portion of each beam lead is an external connection terminal.

16. (Previously presented) The semiconductor chip package of claim 6, wherein an opening is formed on a substantially central portion of the base film so that the chip pads of the integrated circuit chip are exposed through the opening.

17. (Original) The semiconductor chip package of claim 6, wherein the top surface of the base film faces toward the top surface of the integrated circuit chip.

18. (Original) The semiconductor chip package of claim 6, wherein the top surface of the base film faces the same direction as the top surface of the integrated circuit chip.

19. (Original) The semiconductor chip package of claim 6, wherein the base film covers the top surface of the integrated circuit chip, and the top surface of the base film faces toward the top surface of the integrated circuit chip.

20. (Canceled)

21. (Original) A semiconductor chip package comprising:
an integrated circuit chip including a plurality of chip pads formed on a top surface thereof; and
a tape circuit substrate including a base film, a plurality of beam leads formed on a first surface of the base film, and a plurality of solder balls formed on a second surface of the base film,
wherein a first end portion of each beam lead is electrically connected to the solder ball, wherein a second end portion of each beam lead is protruded toward the chip pad from the base film and bonded to the chip pad, and wherein the protruded portion of each beam lead has a wavy portion.

22. (Original) The semiconductor chip package of claim 21, wherein the tape circuit substrate is located above the top surface of the integrated circuit chip and the chip pads are exposed outside of the tape circuit substrate.

23. (Original) The semiconductor chip package of claim 21, wherein the chip pads are arranged along peripheral regions of the top surface of the integrated circuit chip.

24. (Original) The semiconductor chip package of claim 21, wherein the chip pads are arranged along central regions of the top surface of the integrated circuit chip.

25. (Original) The semiconductor chip package of claim 21, wherein the chip pads are arranged along both the peripheral regions and central regions of the top surface of the integrated circuit chip.

26. (Original) The semiconductor chip package of claim 21, further comprising:
an adhesive interposed between the first surface of the tape circuit and the top surface of the integrated circuit chip.

27. (Original) The semiconductor chip package of claim 26, wherein the adhesive includes at least one of epoxy resin, elastomeric polymer, and silicone polymer.

28. (Original) The semiconductor chip package of claim 21, further comprising:
a sealing resin encapsulating the chip pads and the wavy portions of the beam leads.

29. (Original) The semiconductor chip package of claim 21, wherein the wavy portion of the beam lead includes a semicircular wavy portion, an S-shaped wavy portion, or a zigzag wavy portion.

30. (Original) The semiconductor chip package of claim 21, wherein the wavy portion of the beam lead includes a neck part, a bent part, and an end part.

31. (Original) The semiconductor chip package of claim 30, wherein the neck part has a length ranging from about 40 μ m to about 80 μ m, the bent part has a length ranging from about 100 μ m to about 500, and the beam lead has a width of about 50 μ m or less.

32. (Original) The semiconductor chip package of claim 30, wherein the length of the neck part ranges from about 55 μ m to about 75 μ m.

33. (Original) The semiconductor chip package of claim 30, wherein the width of the beam lead ranges from about 10 μ m to about 30 μ m.

34. (Previously presented) A semiconductor chip package comprising:
an integrated circuit chip including a plurality of chip pads formed on a top surface thereof; and

a tape circuit substrate including:

a base film having an opening formed therethrough, the opening defining an inside edge; and

a plurality of beam leads formed on the base film, wherein each beam lead includes a neck portion extending substantially laterally from the edge of the base film into the opening and a widthwise wavy portion extending from the neck portion through the opening toward at least one of the chip pads formed on the top surface of the integrated circuit chip.

35. (Previously presented) The semiconductor chip package of claim 34, wherein each beam lead further comprises an end portion extending from the widthwise wavy portion substantially laterally toward at least one of the chip pads formed on the top surface of the integrated circuit chip.

36. (Previously presented) The semiconductor chip package of claim 34, wherein the widthwise wavy portion of the beam lead extends straight into the opening from the neck portion and bends downward toward the chip pads.

37. (Previously presented) The semiconductor chip package of claim 34, wherein the widthwise wavy portion is adapted to move laterally during an inner lead bonding process.

38. (Currently Amended) A tape circuit substrate comprising:
a flexible base film; and

a plurality of beam leads adjacent the base film, each beam lead including a wavy portion, wherein the base film has a substantially uniform thickness that follows the contours of the beam leads, and[[,]] wherein the base film does not have an opening extending therethrough.

39. (Original) The tape circuit substrate of claim 38, wherein the wavy portion of the beam lead includes a semicircular wavy portion, an S-shaped wavy portion, or a zigzag wavy portion.

40. (Currently Amended) A tape circuit substrate comprising:

a base film; and

a plurality of beam leads adjacent to the base film, each beam lead including a neck portion extending substantially laterally from the base film and a widthwise wavy portion extending from the neck portion, wherein the widthwise wavy portion of the beam lead includes a semicircular widthwise wavy portion or an S-shaped widthwise wavy portion.

41. (Previously presented) The tape circuit substrate of claim 40, wherein the base film includes a flexible film.

42. (Canceled)

43. (Previously presented) A tape circuit substrate comprising:

a base film; and

a plurality of beam leads adjacent to the base film having a length and a width, each beam lead including a widthwise wavy portion, wherein the base film has a substantially uniform thickness that follows substantially the entire contours of the beam.